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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,307	06/26/2003	Jay McDonough	OC0215US	8038

27975 7590 06/14/2006

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EXAMINER	
SHAFER, RICKY D	

ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/609,307	MCDONOUGH ET AL.	
	Examiner	Art Unit	
	Ricky D. Shafer	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *10 and 14-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-13,26 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *06/26/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's election of species "A", depicted by Fig. 1, in the reply filed on 04/18/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 10 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 04/18/2006.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobs et al ('667).

Jacobs et al discloses a polarization conversion system comprising a polarizing beam splitter (22) configured to couple light having a first polarization state (s) to a first region (adjacent element 31) and to couple light having a second polarization state (p) to a second region (adjacent 28); a patterned optical retarder (24) having a first portion (31) of retarder material optically coupled to the first region and a second portion (28) of retarder material optically coupled to the second region, the first portion of the patterned optical retarder providing a first polarization rotation to the light of the first polarization state (s) and the second portion of the patterned optical retarder providing a second polarization rotation to the light of the second

polarization state (p), wherein the first polarization rotation is 90 degrees and the second rotation is zero degrees. Note Fig. 5 along with the associated description thereof.

5. Claims 1, 2, 4, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobs et al ('667).

Jacobs et al discloses a polarization conversion system comprising a polarizing beam splitter (22) configured to couple light having a first polarization state (p) to a first region (adjacent element 28) and to couple light having a second polarization state (s) to a second region (adjacent 31); a patterned optical retarder (24) having a first portion (28) of retarder material optically coupled to the first region and a second portion (31) of retarder material optically coupled to the second region, the first portion of the patterned optical retarder providing a first polarization rotation to the light of the first polarization state (p) and the second portion of the patterned optical retarder providing a second polarization rotation to the light of the second polarization state (s), wherein the first polarization rotation is zero degrees and the second rotation is 90 degrees, wherein the light having the second polarization state obtains the first polarization state when rotated by the second portion of the retarder material, wherein the polarizing beam splitter comprises a first half-cell (the upper portion of the polarizing beam splitter unit) that transmits the light of the first polarization state to the first region and reflects light of the second polarization state to a second half-cell (the lower portion of the polarizing beam splitter unit 30), the second half cell reflecting the light of the second polarization state to the second region, wherein the patterned optical retarder is self-aligned to the particular cells/units of the polarizing beam splitter, wherein the patterned optical retarder is patterned according to a lenslet array (21), see Fig. 5, and wherein the patterned optical retarder includes

an oriented base layer (6) and a layer of photo-crosslinked liquid crystal molecules (see column 2, lines 26-40 along with figures 1a to 3). Note figures 1a to 3 and 5 along with the associated description thereof.

6. Claims 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobs et al ('667).

Jacobs et al discloses a polarization conversion system comprising a polarizing beam splitter (22) and a patterned optical retarder (24), wherein the patterned retarder plate includes a layer of a base material (6), see figures 1a to 3 along with the associated description thereof, coupled to the polarizing beam splitter (22), see Fig. 5, wherein a first portion (A, 28) of the layer of the base material is oriented to a first polarization direction, wherein the first polarization direction is inherently essentially parallel to a polarization of light from a first half-cell (the upper portion of the polarizing beam splitter unit adjacent element 28) of the polarizing beam splitter in order to obtain an overall polarization rotation of zero degrees; wherein a second portion (B, 31) of the layer of the base material is oriented to a second polarization direction, the second polarization direction being orientated (rotated) forty-five degrees from the first polarization direction (see column 4, line 55 to column 5, line 5) in order to obtain an overall polarization rotation of ninety degrees; a layer of birefringent polymer material (8) on the layer of the base material, wherein the layer of birefringent polymer material inherently has a thickness selected to achieve, after polymerization, a half-wave retardance for visible light that is polarized at forty-five degrees from the first direction (see column 5, lines 18-22) due to the fact that the second direction obtains an overall polarization rotation of ninety degrees, wherein the layer of birefringent polymer material is inherently polymerized to align with the first

polarization direction of the first portion of the layer of base material and to align with the second polarization direction of the second portion of the layer of base material in order to function in the manner shown in Fig. 5, wherein the birefringent polymer material comprises liquid-crystal polymer material see column 2, lines 26-40). Note figures 1a to 3 and 5 along with the associated description thereof.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 5, 7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs et al ('667).

Jacobs et al discloses all of the subject matter claimed, note the above explanation, except for explicitly stating that the base (alignment) layer is photochemically oriented.

It is well known to photochemically orientate a base (alignment) layer in the same field of endeavor for the purpose of orienting its optic axis to an alignment direction.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to photochemically orientate a base (alignment) layer of Jacobs et al, as is commonly used and employed in the art, in order to obtain high resolution patterns as well as reducing manufacturing costs, by limiting/omitting the multiple rubbing steps of Jacobs et al.

As the limitations of claim 7, it is well known to disposed a patterned optical retarder onto a polarizing beam splitter.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dispose/attach the patterned optical retarder onto the polarizing beam splitter of Jacobs et al, as is commonly known in the art, in order to obtain a compact optical device.

As the limitations of claim 13, it is well known to use an array of square lenses in the same field of endeavor for the purpose of reducing the spaces between the lenses.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the array of lenses of Jacobs et al to include square lenses, as is commonly used and employed in the art, in order to obtain a compact optical device.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ricky D. Shafer whose telephone number is (571) 272-2320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RDS

June 10, 2006

RICKY D. SHAFER
PATENT EXAMINER
ART UNIT ~~2872~~ 2872